Introduction to Computers & The Internet

Week 11

Security, Privacy, Data Protection & Copyrights

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What is Information Security?

- The tools, means & procedures to ensure the protection of information from internal and external dangers.

- It's a science that focuses on providing protection to the confidentiality and integrity of information & prevent it being exploited.

Aims of Information Security

1. Confidentiality – the information is not shown to unauthorised persons

2. Integrity –ensuring the data has not been modified in any way or been tampered with or deleted

3. Un-deniability- proof that a person or persons deleted some information at a specific time

Risks & weaknesses in information systems

- Fraud and tampering with data
- Using hacking techniques to intercept data over the Internet, e.g. viruses, cookies and data capture
- Password capture
- Receiving and opening emails from unknown sources
- Downloading unauthorised software from bad sites

Reasons behind the weaknesses of Information Systems

- **A user exceeds his authority** – can lead to the exposure of important files or documents

- **An unauthorized person accessing the system** using a stolen password – can lead to him spying on the system or damaging it or the backups

- **Intercepting communications** – a hacker making unauthorised changes to data whilst it is being sent

- **'Flooding'** – where huge amounts of data are sent to a server to cause it to crash

Privacy

‘Individual rights to determine when, how and to what extent their information is available to others or to protect their personal information.’

Privacy contains many aspects…..

Aspects of Privacy

- Privacy includes any information stored on a system about an individual
  - E.g. passport details, civil cases, traffic data etc.

- Includes personal desktops and laptop computers which contain private files & folders
- Also includes mobile devices and the date stored therein such as mobile numbers, data etc.

- Privacy also includes large companies or organisations that store large numbers of customer data, the loss of which would cause serious consequences if given to criminals

Data protection

- Data protection is a means of protecting data from unauthorised access or threated the integrity of personal data.

- Access rights – system users have **unique** ID and **strong** passwords which gives them specific access to certain levels of information. These are changed regularly in order to prevent them being stolen. Access rights also give limited authority to copy or delete records depending on the job function of the employee

- Question: Why do we need unique ID and strong passwords?

Protecting data & privacy

- Use login profiles for all users so that privileges are set and controlled by the network manager
- Use ID's and passwords on all connected systems which must use a secure VPN connection
- Encrypt all devices so that if they are lost or stolen the data is protected.
- Protect your computer by logging out or setting a password controlled screen saver
- Do not leave your important files on any device with a friend or colleague.

Copyright

- What is a copyright?

A copyright is a way of protecting ideas and inventions that is set in law.

It belongs to a person or an institution that invented or created a product, and they have the right to sue any person or organisation who has violated the rules of the copyright.

Copyright 2

- A copyright can be applied to:
  - Digital works in computer science such as software, databases & digital circuit designs.
  - With the growth of the Internet, a copyright can now also apply to domain names, web sites, email addresses and other web related designs.
  - Violation of a copyright would include copying the content, design or techniques specific to a product or item.

Ethics & digital work

- When using or printing digital work or research you must properly reference the original source or author(s). If you don't this is called 'plagiarism' and can lead to zero marks in a piece of work.

- You should only purchase original software and not copies of the software.

- When creating a domain name, you cannot 'copy' a famous domain hoping to get more traffic e.g. google.com & gooogle.com

- You should not misues private emails of other people (e.g. by forwarding them without permission) or send spam emails.

Types of software according to Copyright

1. **Freeware** – free software you can download without charge and use freely.

2. **Shareware** – software that is distributed freely. Authors may ask for feedback to improve the next version. It is copyrighted software

3. **Original copy** – products you must purchase. You need to buy a KEY or PRODUCT ID to use the software fully. You should not use a stolen key or try to crack the software so it is unlocked.

Original software

Original copy – products you must purchase. You need to buy a KEY or PRODUCT ID to use the software fully. You should not use a stolen key or try to crack the software so it is unlocked.

This software is copyright protected and we should not copy it or use it by more than one person or company. This would break the license agreement you agree to when you purchase it.

We use this sentence to show the copyright:

© All rights reserved for 'xxx company'……..

Summary

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